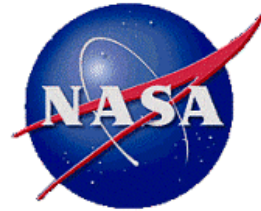# Comparative Analysis of Assessing/Auditing NASA Large, Small, and Academia Suppliers

Philip E. Montag
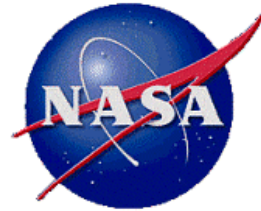*September 27, 2006*

AGENDA

▸ Assessment vs. Audit

▸ Lessons Learned, Experiences

   - Getting In

   - At the Supplier

▸ Comparative Analysis

▸ Questions

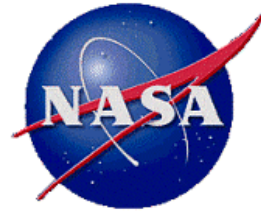# What is an Assessment?

Assessment vs. Audit

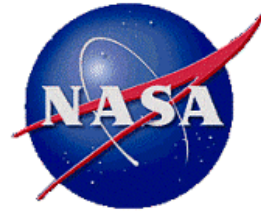**Audit:** Usually contract and product specific, performed to specific requirements.

Assessment: An analysis of the effectiveness of the supplier's quality management system – including policies, plans, practices, facilities, tools and competencies that directly affect the quality of deliverable documentation, hardware and software products, and services to NASA.

# Lessons Learned, Experiences: Getting in the door

- Making the right contact, i.e. who to call?
  - QA Manager, Contracts, Program Manager?

- Research

  - Know what they make, past/present issues
  - What centers and DoD are actively involved?
  - Know how many buildings, outsourcing level

- Push-back
  - Why are you assessing us?, and now?
  - HQ list of 50+ excuses
  - Will this cause us to lose business?
  - Why should we let you in? (FAR 9 & 46)

# Lessons Learned, Experiences: Getting in and onsite.

- Team forming
  - Match skill sets to supplier
  - NASA personnel participation
  - Protective SAM's and Program Managers
- Information to send before arrival
  - Assessment/Audit plan details, including agenda
  - NDAs, attendee list and areas of focus
- At the Supplier
  - Code of Conduct, representative of NASA
  - Do not make commitments or recommendations on behalf of NASA.

COMPARITIVE SUMMARY
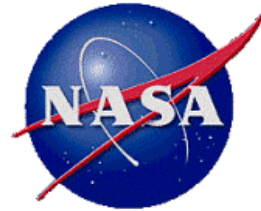
A generalized comparative summary

of some of the salient differences

between Large, Small and Academia
Suppliers

with respect to performing audits and
assessments.

DEFINITIONS
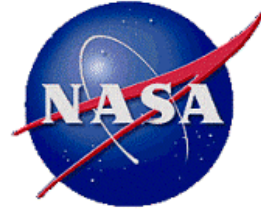
▶ **LARGE Suppliers**

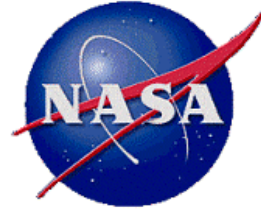 - Manufacturers of finished goods, services, or system integrators to NASA.

▶ **SMALL Suppliers**

 - Manufacturers of sub-systems or components to large suppliers or NASA.

▶ **ACADEMIA**

  - Universities or university associated laboratories who manufacture products for NASA.

COMPARITIVE SUMMARY

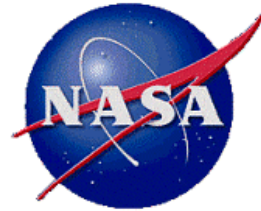| Area	Large Supplier	Small Supplier	University
Management Structure	VP or QA Director	Q/A may be mfg. Mgr. May where many hats.	No Q/A mgt. structure,or limited as req. by contract.
Project Structure	Multiple projects under central management.	Specific product or process.	Multiple projects under multiple managers.
QMS Maturity	QMS governs all procedures.	QMS usually limited in scope	No QMS, or limited elements within each project
Who knows?	Lead is program manager or contracts manager	Lead is manufacturing manager	Lead is Principal Investigator

COMPARITIVE SUMMARY
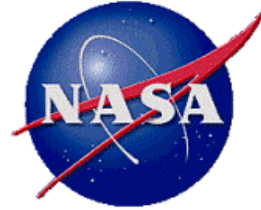
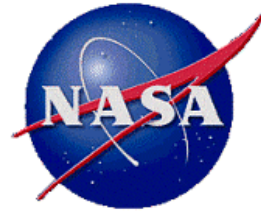| Area	Large Supplier	Small Supplier	University
Getting in the door	Limited push-back	Limited push-back	Major push-back
History	Assessed often, internal and external	Rarely assessed	Almost never assessed
Employee Personality	It's a job	Pride	Passion, Commitment
Environment	One or many buildings	One building, Garage shop	Campus, no structure of Industrial Engineering, spread around campus

COMPARITIVE SUMMARY
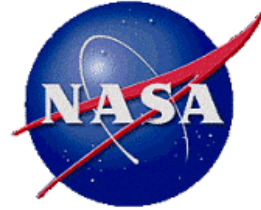
Area	Large Supplier	Small Supplier	University
Workforce	Turnover, large (greater than 200) employees	Old-timers, tribal knowledge, many hats	Old-timers, Grad students, lifetime/career defining op.
After the product ships	Next order?	Purchase order driven	Desire for results of product
C/A Response	Put into formal system and respond	File in cabinet for next assessment	Only if pushed to respond
Attitude	We know what's best for NASA	We'll do what you tell us, nothing more	We're doing work for NASA!

COMPARITIVE SUMMARY

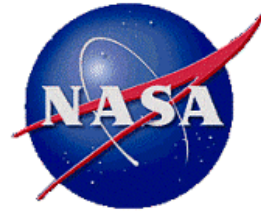| Area	Large Supplier	Small Supplier	University
Funding	Not an issue, it's in the contract	Sometimes NASA doesn't pay us	Spending profiles inconsistent with funding profiles
Fear	Very little, since NASA work is usually a small piece of the overall P&L	Afraid that contract awards will be impacted by results	With no infrastructure in place, fear of funding/grant loss

COMPARITIVE SUMMARY

Observations

● When a University evolves to a large supplier, without the usual QMS infrastructure, the risk is increased.

● When assessing a University, you need to go to each Principal Investigator for the projects being assessed.

● Within the University environment, each program is handled differently, by different people, using different rules. In most cases, University audits are project(s) specific, and can skew the perception.

COMPARITIVE SUMMARY

Thank you all for your time and attention.

Questions?